No.



8700053

TO ALL TO WHOM THESE PRESENTS SHAKE COME:

Western Plant Breeders, Inc.

TUltereas, there has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLI-CANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EX-UDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, MPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT Y THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. INITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Fiesta'

In Testimony Witherest, Thave hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Wash this 31st day of Washington, D. C. December the year of our Lord one thousand nine hundred and ninety.

Variety Protection Office ricultural Marketing Service

1/59

2/20

14a.

Fiesta (experimental # PH 583-10) was selected by Western Plant Breeders from their nursery near Phoenix, Arizona in May of 1982. Fiesta was selected as a single F plant from the F bulk of crosses between WPB's short strawed, male sterile barley populations and WPB's advanced lines. An F plot was planted near Phoenix, Arizona and near Davis, California in the fall of 1982. Disease readings were taken on the Davis planting. Six plant selections were harvested from the Phoenix in May of 1983 and were grown near Bozeman, Montana in the summer of 1983. Uniform plots were harvested in bulk and the bulk F seed was given the exp.# PH 583-10. The resulting F bulk and successive F and F bulk were yield tested in the irrigated areas of Arizona and California in 1984, 1985 and 1986. 360 single plants were harvested from the F bulk in August of 1984 at Bozeman, MT. These were planted as single 5' x 7' plots near Phoenix, Arizona in the fall of 1984. Seed selected from uniform plant plots were harvested in early May of 1985 and bulked to produce Breeders seed. Breeders seed was used to plant 12 acres of seed production in May 1985 near Bozeman, Mt. The resulting production was harvested as Foundation seed and designated "Fiesta". Certified seed of Fiesta was first released to the grower in the fall of 1986.

Fiesta is a stable and uniform variety in agronomic appearance and performance across several generations and growing conditions.

Agronomic data to support this stability are presented in tables Ia. thru VIb.

14b.

Fiesta is a long-awned, six-rowed, semidwarf spring barley that is mid-early to early in maturity. The plant growth type of Fiesta is perhaps most similar to either Gus or WestBred Gustoe. However, Fiesta flowers 5 to 10 days earlier than Gus and 7 to 13 days earlier than Gustoe. Fiesta also has a white aleurone where as Gus and WestBred Gustoe have blue aleurones. The earliness of Fiesta and aleurone color could be compared to CM-72. However Fiesta is 3 to 25 cm shorter than CM-72 and has stiffer straw. The above comparisons along with the complete objective description (14c.) show Fiesta to be a novel variety of spring barley.

14e.

Western Plant Breeders, Inc. is the employer of the breeder and rightfully therefore the owner of "Fiesta".

FORM GR-470-5 (11-1-72)

UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE GRAIN DIVISION HYATTSVILLE, MARYLAND 20782

EXHIBIT C (Barley)

OBJECTIVE DESCRIPTION OF VARIETY

	RDEUM VULGARE)
NAME OF APPLICANT(S)	FOR OFFICIAL USE ONLY
WESTERN PLANT BREEDERS, INC. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	PVPO NUMBER Q7005 Z
P.O.Box 1409 (8111 Timberline Drive)	VARIETY NAME OR TEMPORARY
Bozeman, Mt. 59715	DESIGNATION Fiesta
Place the appropriate number that describes the varietal charac	cter of this variety in the boxes below.
Place a zero in first box (i.e. 0 8 9 or 0 9) when numb 1. GROWTH HABIT:	er is either 99 or less or 9 or less.
1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER	Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT
2. MATURITY (50% Flowering):	
1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes)	3 = LATE (Frontier)
No. of days Earlier than	
1 = BETZES 2 = C	ALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON
No, of days Later than 8 5 = PIROLINE 6 =	PRIMUS 7=UNITAN 8. = WestBred Barcott
3, PLANT HEIGHT (From soil level to top of head):	
1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = N	IEDIUM TALL (Betzes) 4 = TALL (Conquest)
$\begin{bmatrix} 1 & 2 \end{bmatrix}$ Cm. Shorter than $\begin{bmatrix} 2 \\ \end{bmatrix}$ 1 = BETZES 2 = 6	CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	= PRIMUS 7 = UNITAN 9 = POCO
s. STEM:	
3 Exertion (Flag to spike at maturity): 3 = 10 - 15 cm.	n. 1 Anthocyanin: 1 = ABSENT 2 = PRESENT
0 6 NO. OF NODES (Originating from node above ground)	
1 = CLOSED 2 = V-SHAPED 3 = OPE	1 = STRAIGHT 2 = SNAKY
1 Collar Shape: 4 = MODIFIED CLOSED OR OPEN	Shape of Neck: 3 = OTHER (Specify)
5. LEAF:	
Basal leaf sheath (seedling): 1 = GLABROUS 2 = PUBESCENT	Position of flag leaf (at boot stage): 1 = DROOPING 2 = UPRIGHT
2 Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY	2 8 MM. WIDTH (First leaf below flag leaf)
2 8 CM. LENGTH (First leaf below flag leaf)	Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT
6. HEAD:	
Type: 1 = TWO-ROWED 2 = SIX-ROWED	1 = LAX 2 = ERECT (Not dense) 2 Density: 3 = ERECT (Dense)
Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify)	Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY
1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD	3 = WAXY 3 = Rachis (Hair on edge): 1 = LACKING 2 = FEW 3 = COVERED
7. GLUME:	
3 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA	2 Hairs: 1 = NONE 2 = SHORT 3 = LONG
Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE	3 = CONFINED TO BAND 4 = COMPLETELY COVERED
Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 3 = MORE THAN EQUAL TO LENGTH OF GLUMES	2 = EQUAL TO LENGTH OF GLUMES
3 Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = RO	UGH

	FIE	STA	8700053
8. LEMMA:			
5 Awn: 3=	AWNLESS 2 = AWNLETS ON CENTRAL ROSHORT ON CENTRAL ROWS, AWNLETS ON L LONG (longer than spike) 6 = HOODED		ERAL ROWS CHORT (less than equal to length of spike)
3 Awn Surface:	0 = AWNLESS 1 = SMOOTH 2 = SEMISM	MOOTH 3 = ROUGH	
2 Teeth: 1 = Al	BSENT 2 = FEW 3 = NUMEROUS	1 Hair: 1 = ABS	ENT 2 = PRESENT
2 Shape of base:	1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE	2 Rachilla Hairs:	1 = SHORT 2 = LONG
9. STIGMA:			
2 Hairs: 1 = FE	W 2 = MANY		
10. SEED:			
2 Type: 1 = N/	AKED 2 = COVERED	1 Hairs on Ventral	Furrow: 1 = ABSENT 2 = PRESENT
4 Length: 1 = S 4 = N	SHORT (8.0 mm.) 2 = SHORT TO MIDLONG MIDLONG TO LONG (9.0 - 10.5 mm.)		IIDLONG (8.5 - 9.5 mm.) ONG (10.0 mm.)
3 Wrinkling of hu	ll: 1 = NAKED 2 = SLIGHTLY WRINKLED	3 = SEMIWRINKLEI	O 4 = WRINKLED
1 Aleurone Color:	: 1 = COLORLESS (White or Yellow) 2 = B	LUE	
0 1 PERCENT	ABORTIVE	5 0 GMS. PER 10	000 SEEDS
11. DISEASE: (0 = No	ot Tested, 1 = Susceptible, 2 = Resistant)		
0 SEPTORIA	1 NET BLOTCH	SPOT BLOTCH	2 POWDERY MILDEW
1 LOOSE SMUT	0 BACTERIAL BLIGHT	0 COVERED SMUT	1 FALSE LOOSE SMUT
0 STEM RUST	1 LEAF RUST	0 SCAB	1 scald
O AY	0 BSMV	2 BYDV	OTHER (Specify)
12. INSECT: (0 = Not t	ested, 1 = Susceptible 2 = Resistant)		
GREEN BUG	0 ENGLISH GRAIN APHID	0 CHINCH BUG	0 ARMYWORM
0 GRASS HOPPERS	O CERIAL LEAF BETTLE	0 OTHER (Specify)	
HESSIAN FLY R	ACES GP 0 A	0в 0с	
) O D O E	0 F 0 G	
13. CHEMICAL (0 = Not	t Tested, 1 = Susceptible, 2 = Resistant)		
0 рет	0 OTHER (Specify)		
	VARIETY MOST CLOSELY RESEMBLES THAT	SUBMITTED:	
CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Gus	Seed size	CM-72
Leaf size	Gustoe	Coleoptile elongation	Gustoe
Leaf color	Gus	Seedling pigmentation	Gustoe

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

- 1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
- 2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61-84.
- 3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

Leaf carriage

Gus

Table Ia. Yield in pounds per acre of Fiesta and presently grown varieties in Western Plant Breeders trials in the Southwestern United States.

			WestBred		WestBred	WestBred	l .		
Location	<u>Year</u>	<u>Fiesta</u>	<u>Barcott</u>	<u>Gus</u>	501	Gustoe	<u>Prato</u>	Nk.BB-82-2	UC-476
			•						
Phoenix,AZ	1984	8300	7920	7260	8085	9240	7205	8360	
	1985	8269	8704	7453	7507	7398	5712	6494	****
	1986	6670	7482	<u>6728</u>	*****	<u>7656</u>		6670	<u>6148</u>
3yr.	Avg.	7746	8035	7147		8112		7175	
	•					~			
			K						
Davis, CA.	1984	4418	4002	5336	4118	6090	4988	5278	
	1985	6264	5394	4582	5278	5800	6206	7366	
	1986	6795	<u>5404</u>	6848		<u>6848</u>		<u>7597</u>	<u>5671</u>
3yr.	Avg.	5826	4933	5588		6246		6747	
•									
Fresno,CA	1984	6318	6264	4914	5130	5346	6804	5886	
	1985	7772	7598	8004	441 198	7250	7424	8178	8410
	1986	<u>6554</u>	5742	<u>5336</u>	-	<u>5916</u>		<u>5800</u>	<u>5162</u>
3yr.	Avg.	6881	6535	6085	,	6171		6221	

Table Ib. Yield in pounds per acre of Fiesta and presently grown varieties in California public trials.

			WestBred					
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	<u>Gustoe</u>	<u>CM-72</u>	<u>Prato</u>	UC-476	Nk-BB-82-	2
Merced Co.	1985	4700bc	5450a	4460c	5280ab	5150abc	5300ab	
Kern Co.	1985	5600	5340	5450	6160	6470	6320	N.S
	1986	4860ab	5420a	4140bc	3800c	4670b	4810ab	
King Co.	1985	5620a	5750a	3670c	5400a	5550a	5820a	
	1986	4220b	5160a	3970b	4320b	4030b	5620a	
Westside								
Field Stati	on							
	1985	6740c	7790ab	6490c	7300bc	8120a	7210bc	
	1986	4970abc	4140c	4310bc	5220a	5420a	5050ab	
U C Davis	1985	3830b	3940b	3530b	4890a	5080a	4740a	
	1986	3800c	4410b	3120d	4350b	4670b	5550a	
							•	
Sutter Co.	1985	6690ab	7080a	5430b	6320ab	6130b	5850b	
	1986	3180cd	4010b	2540d	3920ь	3820bc	4890a	
Butte Co.	1985	8950a	9460a	5180c	8130a	8430a	8380a	
	1986	6020b	6430b	4160c	6180b	6130b	7250a	

Table Ic. Yield in pounds per acre of Fiesta and presently grown varieties in Arizona public trials.

			WestBred	WestBred			
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	<u>Gustoe</u>	<u>Barcott</u>	Columbia	<u>Prato</u>	<u>Poco</u>
•							
Maricopa	1985	6318a	6902a	6682a	6655a	4746c	
	1986	5215c	5838ab	6005a	5410bc	3828d	3675d
Yuma	1986	5693cd	6210b	7075a	5633cd	5628cd	 ,

Table IIa. Plant height in inches of Fiesta and presently grown varieties in Western Plant Breeders trials.

			WestBred		WestBred			
<u>Location</u>	Year	<u>Fiesta</u>	Barcott	<u>Gus</u>	Gustoe	<u>Prato</u>	Nk-BB-82-2	<u>UC-476</u>
•								
Phoenix,AZ.	1984	34	32	36	33	37	39	
	1986	28	26	32	29		36	34
Fresno,CA.	1986	32	33	35	32		38	38

Table IIb. Plant height in inches of Fiesta and presently grown varieties in public trials.

			WestBred	WestBred				Nk-BB	
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	Gustoe	<u>Barcott</u>	<u>CM-72</u>	<u>Prato</u>	<u>UC-476</u>	82-2	<u>Poco</u>
<u>California</u>			•						
Merced Co.	1985	35	32	***	36	38	38	37	
Kern Co.	1986	31	31	28	32	31	34	35	
King Co.	1985	30	33		36	40	39	42	
/	1986	34	34	35	33	37	36	41	
WestSide									
Field Station	n								
	1985	25	25		30	26	27	27	
	1986	33	33	34	37	38	37	39	·
U.C.Davis	1985	35	36		40	38	36	43	
•	1986	31	32	31	36	39	41	43	
Sutter Co.	1985	32	36		39	39	41	42	1000 TORS
	1986	33	35	35	38	40	40	42	
Butte Co.	1985	31	34	~~	41	39	39	42	****
	1986	30	30	35	40	38	38	38	
•									
Arizona			,			·			
Maricopa	1985	36	32	36		38	·		
	1986	30	29	30	~~	37			25

Table IIIa. Heading date of Fiesta and presently grown varieties in Western Plant Breeders trials.

			WestBred		W.B.	WestBred		Nk-BB	
Location	<u>Year</u>	<u>Fiesta</u>	<u>Barcott</u>	<u>Gus</u>	<u>501</u>	<u>Gustoe</u>	<u>Prato</u>	82-2	<u>UC-476</u>
Phoenix	1984	3/11	2/28	3/19	3/15	3/20	3/11	3/19	
	1985	3/17	3/7	3/22	3/20	3/25	3/18	3/23	1974 64%
	1986	3/4	2/26	3/14		3/16		3/13	3/11

FIESTA

Table IIIb. Heading date of Fiesta and presently grown varieties in public trials.

			WestBred	WestBred				NK-BB	
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	Gustoe	Barcott	<u>CM-72</u>	<u>Prato</u>	<u>UC-476</u>	<u>82-2</u>	<u>Poco</u>
<u>California</u>									
Merced Co.	1985	3/26	4/8		4/4	4/5	4/6	4/6	****
U.C.Davis	1985	4/3	4/12		3/30	4/3	4/4	4/5	
	1986	3/23	4/5	3/18	3/25	3/27	3/29	3/31	***
Arizona									
Maricopa	1985	3/12	3/21	2/26		3/17		~	
	1986	3/2	3/13	2/20	, 	3/8	544 489	100 day	2/4

Table IV. Maturity (date) of Fiesta and presently grown varieties in public trials.

			WestBred	WestBred				Nk-BB	
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	Gustoe	<u>Barcott</u>	CM-72	<u>Prato</u>	UC-476	82-2	<u>Poco</u>
U.C.Davis,	1986	5/7	5/15	4/30	5/4	5/6	5/7	5/14	
California									
Maricopa	1986	4/16	4/22	4/3		4/17	44E MID		4/1

Table Va. Lodging (percentage) of Fiesta and presently grown varieties in Western Plant Breeders trials.

•	-		WestBred	d	W.B.	WestBred		Nk-BB	
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	<u>Barcott</u>	<u>Gus</u>	<u>501</u>	<u>Gustoe</u>	<u>Prato</u>	82-2	<u>UC-476</u>
Phoenix,AZ.	1984	0	0	2	0	5	45	0	
THOSHITA, AZ.	1985	o o	0	40	20		45 75		
	1905	O	U	40	20	40	75	20	
•	1986	10 .	0	65		10		0	35
					·				
Fresno,CA.	1984	10	0	100	100	100	70	0	
	1986	0	0	5		10		0	0
Davis,CA.	1985	25	. 0	75	0	. 0	50	0	
	1986	^ 5	0	10		10		20	50

Table Vb. Lodging (percentage) of Fiesta and presently grown varieties in California public trials.

			WestBred	WestBred				NK-BB
Location	<u>Year</u>	<u>Fiesta</u>	Gustoe	Barcott	<u>CM-72</u>	<u>Prato</u>	<u>UC-476</u>	82-2
Managed Co	1005		0		00			•
Merced Co.	1985	2	0		88	10	10 .	0
King Co.	1985	0	0	~~	88	50	10	0
	1986		-					
WestSide								
Field Station		_				_	_	_
	1985	3	5	407 440	10	3	3	3
-	1986							
•		·						
U.C.Davis	1985	0	0		88	30	10	0
	1986							5
		_	_					4
	1985	3	0	***************************************	65	5	10	0
	1986							1
Butte Co.	1985	0	0		88	3	3	0

FIESTA

Table VIa. Test weight in pounds per bushel of Fiesta and presently grown varieties in Western Plant Breeders trials.

Location	<u>Year</u>	<u>Fiesta</u>	WestBred Barcott			WestBred Gustoe	<u>Prato</u>	NK-BB 82-2	<u>UC-476</u>
Phoenix, AZ.	1985 1986	54 54	50 53	51 54	53 	50 56	49	47 53	 52
Fresno, CA.	1984 1985 1986	52 53. 51	47 47 49	46 53 48	47 	47 53 50	51 51	48 50 49	 53 53
Davis, CA.	1984	53	45	51	50	51	49	48	
Davis, CA.	1985 1986	51 53	49 46	47 48	49 	53 50	52 	48 50	 51

Table VIb. Test weight in pounds per bushel of Fiesta and presently grown varieties in California public trials.

			WestBred				
<u>Location</u>	<u>Year</u>	<u>Fiesta</u>	<u>Gustoe</u>	<u>CM-72</u>	<u>Prato</u>	<u>UC-476</u>	NK-BB-82-2
Merced Co.	1985	53	52	. 48	51	52	50
Kern Co.	1985	54	53	51	53	52	52
	1986	57	58	55	55	55	55
King Co.	1985 1986	57 55	56 53	54 52	55 52	56 54	54 53
WestSide Field Statio	on			•			
	1985	57	56	55	55	55	53
	1986	54	55	53	53	54	52
U.C.Davis	1985 1986	49 52	49 53	45 51	49 49	50 51	49 50
Sutter Co.	1985	54	54	53	52	54	49
	1986	54	51	53	50	51	, 49 % ay.
Butte Co.	1985	55	55	53	53	53	52
	1986	55	54	53	53	54	52